

A2 DvP37
cont

26. The composite metal seal ring as claimed in claim 21, wherein the composite metal seal ring is adapted for containing a pressure within the hubs of at least 10,000 psi, the composite metal seal ring has an internal diameter of at least 3 inches, and the composite metal seal ring is a hybrid of a pressure energized seal type AX and a compression seal type BX. --

REMARKS

In response to the Notice of Draftsperson's Patent Drawing Review, a set of formal drawings was received in the Patent and Trademark Office on Oct. 10, 2000.

In response to paragraph 2 on page 2 of the Official Action, claims 15 to 20 have been cancelled in affirmation of the election to prosecute the invention of group I, claims 1 to 14.

In response to paragraph 4 on page 3 of the Official Action, claim 10 has been amended in lines 4-5 by changing "the first second" to --the first--.

In paragraph 6 on 3 to 5 of the Official Action, claims 1, 3, 6, 8, 10 and 13 were rejected under 35 U.S.C. 102(b) as being anticipated by Fyffe, U.S. Patent No. 1,426,724. Applicants respectfully traverses. "For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference." Diversitech Corp. v. Century Steps, Inc., 7 U.S.P.Q.2d 1315, 1317 (Fed. Cir. 1988), quoted in In re Bond, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990) (vacating and remanding Board holding of anticipation).

The Official Action contends that in seal in FIG. 3 of Fyffe, the annular region of relatively soft metal (c) is "integrally bonded" with the core of relatively hard metal. The applicant respectfully disagrees. There is nothing in Fyffe to suggest that the annular region of relatively soft metal (c) is "integrally bonded" with the core of relatively hard metal. To the contrary, Fyffe

discloses, in column 2 lines 53-62, that the annular region of relatively soft metal is merely placed in position with respect to the core of relatively hard metal, and secured by clamping of the collars of the pipe joint:

In use the collars are connected to the pipes or fittings to be joined, the core is then placed between the collars with soft metal seatings between the core and the collars, the coupling ring is then placed in position and screwed up so as to draw the collars towards one another and grip the soft metal seating between the core and the collars, the soft metal seating taking a bearing against the central rib.

This should be contrasted with the description in the applicant's specification, page 17, lines 8 to 16:

A preferred method of fabricating the composite metal seal ring 15 includes a welding overlay process. This welding process deposits the relatively soft metal overlay 35, 36 onto the relatively hard metal core 34 in such a way as to produce an integral bond between them. In other words, the composite metal seal ring 15 functions as an integral piece of metal, although the properties of the metal are different in different regions of the composite metal seal ring.

In paragraph 8 on page 5 of the Official Action, claims 2 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fyffe. Applicant respectfully traverses. Fyffe has been distinguished with respect to the limitations of claims 1 and 8, which are to be incorporated by reference into claims 2 and 9 in accordance with 35 U.S.C. 112, paragraph 4. In addition, the limitation of a thickness of 1/8 inch further distinguishes combination of Fyffe with the other references showing thin films of soft or non-corrosive material, such as gold or silver plating, at a sealing interface. Obviously, a thickness of 1/8 inch or more of relatively soft material functions

in a substantially different way than a thin film, for example with respect to the stress relief and plastic flow described on page 15 line 15 to page 16 line 4 of applicant's specification.

In paragraph 9 on pages 5 to 6 of the Official Action, claims 5 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fyffe in view of Bloom, U.S. Patent No. 5,680,495. Applicant respectfully traverses. The Official Action says: "Bloom discloses that a deformable metal seal, where a soft metal is welded onto an annular core of relatively hard metal." The Official Action, however, does not specifically identify a seal including soft metal welded onto an annular core of relatively hard metal. Instead, Bloom discloses a hermetically sealed fiber optic device in which metal seals such as pure aluminum blocks (shown as rectangular blocks 66) are formed by injecting molten aluminum into molds, during which the molten aluminum bonds to the optical fiber chemically and forms a compression seal on the optical fibers during cooling. The metal seals are then used to define a boundary for substrate bodies used to enclose the fiber optic device, where a hermetic seal is formed between the metal seals and the substrates by compressing the substrates onto the metal seals. (See the Abstract of Bloom and FIGS. 6 and 7.) Bloom col. 6 lines 61-63 further says: "If desired, ultrasonic welding may also be performed to weld the contacting metal layers."

Paragraph 9 of the Official Action concludes: "It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the relatively hard metal and the relatively soft metal of Fyffe to be welded to each other, to provide a gas tight seal and a better deformable seal (see column 6, lines 34-39 and column 7, lines 14-21 of Bloom)." The applicant respectfully disagrees. The permanent hermetic sealing of electronic components is an entirely distinct field of endeavor than the use of annular seals of the kind used for coupling metal

tubular members as in Fyffe. If a person of ordinary skill would want to make a relatively permanent, gas-tight seal between metal tubular members, the person of ordinary skill would use conventional welding techniques; for example, oil and gas pipelines are typically constructed by welding together pipe segments. Annular seals for coupling metal tubular members as in Fyffe, and welding techniques for joining metal tubular members, have been known for about 80 years since Fyffe, yet none of the art cited by the examiner applicable to annular seals suggests the applicant's invention, which admittedly offers significant advantages over the prior art. This is objective evidence of the patentability of the applicant's invention. Fromson v. Advance Offset Plate, Inc., 755 F.2d 1549, 1557, 225 U.S.P.Q. 2d, 32-33 (Fed. Cir. 1985) (It is at best bizarre to assert that the subject matter claimed was merely an obvious extension of technology when none skilled in the art attempted such "extension" during the seven years when alleged economic advantages of such technology were available). See also In re Dembiczak, 175 F.3d 994, 999-1000, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999)(actual evidence and particular findings need to support the PTO's obviousness conclusion); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."); In re Fritch, 972 F.2d 1260, 1266, 23 U.S.P.Q.2d 1780, 1784 (Fed. Cir. 1992) ("It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious."); In re Gordon et al., 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) (mere fact that prior art could be modified by turning apparatus upside down does not make modification obvious unless prior art suggests desirability of modification); In re Horne, 203 U.S.P.Q. 969, 971 (C.C.P.A. 1979)(For the teachings of a reference

to be prior art under 35 U.S.C. §103, there must be some basis for concluding that the reference would have been considered by one skilled in the particular art working on the particular problem with which the invention pertains).

In paragraph 10 of the Official Action, claims 7, 12 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fyffe in view of Poe, U.S. Patent No. 4,563,025. Applicant respectfully traverses. Claims 7, 12, and 14 are dependent claims, which include by reference the limitations of at least claims 1 and 8. Fyffe has been distinguished with respect to the base claims 1 and 8, and there is nothing in Poe that makes up for the disclosure lacking in Fyffe.

New claim 21 includes the limitations of claims 8, 9, 10, 11 and 13, and in addition recites (in line 1 of the claim) that the seal is “resetable,” as described on page 4 lines 8 to 15, page 10 lines 20 to 22, and page 14 lines 19 to 21 of applicant’s specification as originally filed.

New claim 22 includes the limitations of claim 14 of applicant’s specification as originally filed.

New claim 23 defines that the seal ring can contain a pressure within the hubs of at least 10,000 psi. This is described on page 14 lines 19 to 22 of applicant’s specification as originally filed.

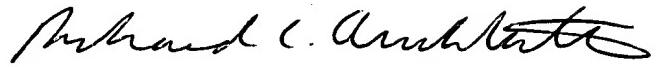
New claim 24 defines that the seal ring has an internal diameter of at least 3 inches. This is described on page 13 lines 1 to 5 of applicant’s specification as originally filed.

New claim 25 defines that the seal ring is a hybrid of a pressure energized seal type AX and a compression seal type BX. This is described on page 13 lines 16 to 19 of applicant’s specification as originally filed.

New claim 26 includes the limitations of new claims 23, 34, and 25.

In view of the above, it is respectfully submitted that the application is in condition for allowance. Early allowance is earnestly solicited.

Respectfully submitted,



Richard C. Auchterlonie
Reg. No. 30,607
713-787-1698

HOWREY SIMON ARNOLD & WHITE, LLP
750 Bering Drive
Houston, Texas 77057-2198
713-787-1400

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